Listing of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-32 (cancelled)

33. (New) A method of using a G protein-coupled receptor to screen candidate compounds as pharmaceutical agents for a disease or disorder ameliorated by an elevation of an intracellular level of cAMP in peripheral blood leukocytes, said method comprising the steps of:

(a) contacting one or more said candidate compounds with a host cell or with membrane of a host cell that expresses said receptor; and

(b) measuring the ability of the compound or compounds to stimulate functionality of the receptor;

wherein the ability of the compound or compounds to stimulate functionality of the receptor is indicative of the compound or compounds being an agonist or partial agonist of the receptor; wherein the G protein-coupled receptor is a receptor comprising an amino acid sequence of SEQ ID NO:82; and wherein the pharmaceutical agent is an agonist or partial agonist of the receptor.

34. (New) The method of claim 33 wherein the sequence of SEQ ID NO: 82 comprises one or more amino acid substitutions selected from the group consisting of a substitution of an amino acid other than isoleucine for isoleucine at amino acid position 225 of SEQ ID NO:82, a substitution of lysine for isoleucine at amino acid position 225 of SEQ ID NO:82, a substitution of alanine for proline at amino acid position 43 of SEQ ID NO:82, a substitution of asparagine for lysine at amino acid position 97 of SEQ ID NO:82, and a substitution of phenylalanine for isoleucine at amino acid position 130 of SEQ ID NO:82.

35. (New) The method of claim 33 wherein said host cell comprises an expression vector, said expression vector comprising a polynucleotide encoding the G protein-coupled receptor.

36. (New) An isolated polynucleotide comprising a nucleic acid sequence encoding a non-endogenous, constitutively activated version of a G protein-coupled receptor, wherein the nucleic acid sequence encodes an amino acid sequence of SEQ ID NO: 82 that comprises a substitution of an amino acid other than an isoleucine for the isoleucine at position 225 of said amino acid sequence.

37. (New) The isolated polynucleotide of claim 36 wherein said amino acid sequence comprises one or more amino acid substitutions selected from the group consisting of a substitution of alanine for proline at amino acid position 43, a substitution of asparagine for lysine at amino acid position 97, and a substitution of phenylalanine for isoleucine at amino acid position 130 of said amino acid sequence.

38. (New) The isolated polynucleotide of claim 36 wherein said amino acid sequence comprises a lysine substitution for isoleucine at position 225.

39. (New) The isolated polynucleotide of claim 38 wherein said amino acid sequence comprises one or more amino acid substitutions selected from the group consisting of a substitution of alanine for proline at amino acid position 43, a substitution of asparagine for lysine at amino acid position 97, and a substitution of phenylalanine for isoleucine at amino acid position 130 of said amino acid sequence.

40. (New) A vector comprising the isolated polynucleotide of claim 36, 37, 38 or 39.

41. (New) The vector of claim 40, wherein said vector is an expression vector.

42. (New) A recombinant host cell comprising the vector of claim 40.

43. (New) A recombinant host cell comprising the expression vector of claim 41.

44. (New) A process for making a recombinant host cell comprising the steps of:

(a) transfecting the expression vector of claim 41 into a suitable host cell; and

(b) culturing the host cell under conditions which allow the expression of a non-endogenous, constitutively activated version of a human G protein-coupled receptor from the expression vector.

45. (New) A recombinant host cell produced by the process of claim 44.

46. (New) An isolated membrane of a recombinant host cell according to claim 42, 43, or 45.

47. (New) An isolated non-endogenous, constitutively activated version of a G protein-coupled receptor comprising an amino acid sequence of SEQ ID NO:82 that comprises a substitution of an amino acid other than an isoleucine for the isoleucine at position 225 of SEQ ID NO:82.

48. (New) The isolated non-endogenous, constitutively activated version of a G protein-coupled receptor of claim 47 wherein said amino acid sequence comprises one or more amino acid substitutions selected from the group consisting of a substitution of alanine for proline at amino acid position 43, a substitution of asparagine for lysine at amino acid position 97, and a substitution of phenylalanine for isoleucine at amino acid position 130.

49. (New) The isolated non-endogenous, constitutively activated version of a G protein-coupled receptor of claim 47 wherein said amino acid sequence comprises a lysine substitution for isoleucine at position 225.

50. (New) The isolated non-endogenous, constitutively activated version of a G protein-coupled receptor of claim 47 wherein said amino acid sequence comprises one or more amino acid substitutions selected from the group consisting of a substitution of alanine for proline at amino

acid position 43, a substitution of asparagine for lysine at amino acid position 97, and a substitution of phenylalanine for isoleucine at amino acid position 130.

51. (New) A method for identifying one or more candidate compounds as a modulator of a non-endogenous, constitutively activated version of a G protein-coupled receptor, said method comprising the steps of:

(i) contacting said one or more candidate compounds with a host cell or with membrane of a host cell that expresses said receptor; and

(ii) measuring the ability of the compound or compounds to inhibit or stimulate functionality of the receptor,

wherein said receptor comprises an amino acid sequence of SEQ ID NO:82 that comprises a substitution of an amino acid other than an isoleucine for the isoleucine at position 225 of said amino acid sequence.

52. (New) The method of claim 51 wherein said amino acid sequence comprises one or more amino acid substitutions selected from the group consisting of a substitution of alanine for proline at amino acid position 43, a substitution of asparagine for lysine at amino acid position 97, and a substitution of phenylalanine for isoleucine at amino acid position 130 of said amino acid sequence.

53. (New) The method of claim 51 wherein said amino acid sequence comprises a lysine substitution for isoleucine at position 225.

54. (New) The method of claim 53 wherein said amino acid sequence comprises one or more amino acid substitutions selected from the group consisting of a substitution of alanine for proline at amino acid position 43, a substitution of asparagine for lysine at amino acid position 97, and a substitution of phenylalanine for isoleucine at amino acid position 130 of said amino acid sequence.

55. (New) The method according to claim 51, 52, 53 or 54 wherein the modulator is selected from the group consisting of agonist, partial agonist, and inverse agonist.

56. (New) The method according to claim 51, 52, 53 or 54 wherein the modulator is an inverse agonist.

57. (New) The method of claim 51, 52, 53 or 54 wherein said host cell comprises an expression vector, said expression vector comprising a polynucleotide encoding the non-endogenous, constitutively activated version of a G protein-coupled receptor.

58. (New) The method according to claim 57 wherein the modulator is selected from the group consisting of agonist, partial agonist, and inverse agonist.

59. (New) The method according to claim 57 wherein the modulator is an inverse agonist.